

CLAIMS

1. A portable data carrier (10), which comprises a
5 carrier storage (12) for storing data containing a bio-
metric template (13) and an application-specific function
(15) as well as carrier communication means (11) for con-
tactless receipt and transmission of data, c h a r a c -
t e r i s e d in that it further comprises carrier pro-
10 cessing means (16) for comparing the biometric template
with a biometric sample (23) received from an external
arrangement (20), and that it is arranged to complete a
handshake process with the external arrangement as well
as perform the application-specific function and transmit
15 a result of the same to the external arrangement, only if
the biometric sample matches the biometric template.

2. A portable data carrier (10) as claimed in
claim 1, wherein the application-specific function (15)
comprises retrieving from the carrier storage (12) appli-
20 cation-specific information (14) stored therein, said
result containing the application-specific information.

3. A portable data carrier (10) as claimed in any
one of the preceding claims, wherein the application-
specific function (15) comprises executing program code
25 stored in the carrier storage (12).

4. A portable data carrier (10) as claimed in any
one of the preceding claims, arranged to perform the
application-specific function (15) and transmit said
result of the same to the external arrangement (20)
30 in response to an enquiry received from the external
arrangement.

5. A portable data carrier (10) as claimed in any
one of the preceding claims, wherein the biometric tem-
plate (13) corresponds to a digital image containing
35 individual-specific information.

6. A portable data carrier (10) as claimed in any one of the preceding claims, wherein the biometric template (13) defines at least part of a fingerprint.

5 7. A portable data carrier (10) as claimed in any one of the preceding claims, wherein the biometric template (13) corresponds to feature reference data.

8. A portable data carrier (10) as claimed in any one of the preceding claims, arranged to store in the carrier storage (12) a threshold value which defines to
10 what degree the biometric sample (23) should correspond to the biometric template (13) for a match to be considered to exist.

9. A portable data carrier (10) as claimed in any one of the preceding claims, which data carrier is a
15 smart card.

10. A portable data carrier (10) as claimed in any one of claims 1-8, which data carrier is an electronic passport.

11. A portable data carrier (10) as claimed in any
20 one of claims 1-8, which data carrier is a mobile phone.

12. A portable data carrier (10) as claimed in any one of claims 1-8, which data carrier is a PDA (Personal Digital Assistant).

13. A portable data carrier (10) as claimed in any
25 one of the preceding claims, arranged to prevent the external arrangement (20) from accessing the biometric template (13).

14. A portable data carrier (10) as claimed in any one of the preceding claims, arranged to communicate with
30 the external arrangement (20) only for a predetermined time after the match has been considered to exist.

15. A portable data carrier (10) as claimed in any one of the preceding claims, arranged to transmit a presence signal in response to a search signal received from
35 the external arrangement (20) to confirm its presence within a communication range of the external arrangement.

16. A portable data carrier (10) as claimed in any one of claims 1-14, arranged to prevent all transmission of data from the same until a match is considered to exist.

5 17. A method of transferring data by means of a portable data carrier (10) which comprises a carrier storage (12) for storing data containing a biometric template (13) and an application-specific function (15) as well as carrier communication means (11) for contact-
10 less receipt and transmission of data, c h a r a c -
t e r i s e d by
receiving a biometric sample (23) from an external arrangement (20) (B3),
comparing by carrier processing means (16) in the
15 data carrier the biometric sample with the biometric template (B4), and
completing a handshake process with the external arrangement as well as performing the application-specific function and transmitting a result of the same
20 to the external arrangement (B10), only if the biometric sample matches the biometric template.

18. A method as claimed in claim 17, wherein performing the application-specific function (15) comprises retrieving from the carrier storage (12) application-specific information (14) stored therein, said result
25 containing the application-specific information.

19. A method as claimed in claim 17 or 18, wherein performing the application-specific function (15) comprises executing program code stored in the carrier
30 storage (12).

20. A method as claimed in any one of claims 17-19, comprising performing the application-specific function (15) and transmitting said result of the same to the external arrangement (20) (B10) in response to an enquiry
35 received from the external arrangement (B9).

21. A method as claimed in any one of claims 17-20, wherein the biometric template (13) corresponds to a digital image containing individual-specific information.

5 22. A method as claimed in any one of claims 17-21, wherein the biometric template (13) defines at least part of a fingerprint.

23. A method as claimed in any one of claims 17-22, wherein the biometric template (13) corresponds to feature reference data.

10 24. A method as claimed in any one of claims 17-23, further comprising evaluating a result of the comparison against a threshold value which is stored in the carrier storage and which defines to what degree the biometric sample should correspond to the biometric template for
15 a match to be considered to exist (B5).

25. A method as claimed in any one of claims 17-24, wherein the data carrier (10) is a smart card.

26. A method as claimed in any one of claims 17-24, wherein the data carrier (10) is an electronic passport.

20 27. A method as claimed in any one of claims 17-24, wherein the data carrier (10) is a mobile phone.

28. A method as claimed in any one of claims 17-24, wherein the data carrier (10) is a PDA (Personal Digital Assistant).

25 29. A method as claimed in any one of claims 17-28, further comprising preventing communication with the external arrangement (20) when a predetermined time, after a match has been considered to exist (B5), has elapsed.

30 30. A method as claimed in any one of claims 17-29, further comprising receiving a search signal from the external arrangement (20) (B1) and, in response to the search signal, transmitting a presence signal (B2) to confirm its presence within a communication range of the
35 external arrangement.

31. A method as claimed in any one of claims 17-29, further comprising preventing all transmission of data

from the portable data carrier (10) until a match is considered to exist (B5).

32. A storage medium comprising a computer program with instructions which are arranged, in execution, to
5 carry out the method as claimed in any one of claims 17-31.

33. An external arrangement (20) comprising arrangement communication means (21) for contactless receipt and transmission of data, and a sensor (25) for recording a
10 biometric sample (23), characterised in that it is arranged to transmit the biometric sample to a portable data carrier (10), and that it is arranged to complete a handshake process with the portable data carrier and receive from the portable data carrier a result
15 of an application-specific function (15) performed in the portable data carrier, only if the biometric sample matches a biometric template (13) stored in the portable data carrier.

34. An external arrangement (20) as claimed in
20 claim 33, arranged to receive as said result application-specific information (14) stored in the data carrier.

35. An external arrangement (20) as claimed in claim 33 or 34, arranged to transmit an enquiry to the portable data carrier (10) and receive said result in response to
25 said enquiry.

36. An external arrangement (20) as claimed in any one of claims 33-35, wherein the biometric sample (23) corresponds to a digital image containing individual-specific information.

30 37. An external arrangement (20) as claimed in any one of claims 33-36, wherein the biometric sample (23) defines at least part of a fingerprint.

38. An external arrangement (20) as claimed in any one of claims 33-37, wherein the biometric sample (23)
35 corresponds to feature data.

39. An external arrangement (20) as claimed in any one of claims 33-38, arranged to transmit a search signal

and, in response to the search signal, receive a presence signal from the portable data carrier (10) to detect its presence within a communication range of the external arrangement.

5 40. An external arrangement (20) as claimed in any one of claims 33-39, arranged to transmit the biometric sample (23) according to a predetermined schedule until a match is considered to exist.

10 41. A method of transferring data by means of an external arrangement (20) which comprises arrangement communication means (21) for contactless receipt and transmission of data, and a sensor (25), comprising recording a biometric sample (23) by means of the sensor (U3), c h a r a c t e r i s e d in that it further com-
15 prises

transmitting the biometric sample to a portable data carrier (10) (U4), and

completing a handshake process with the portable data carrier and receiving from the portable data carrier
20 a result of an application-specific function (15) performed in the portable data carrier (U10), only if the biometric sample matches a biometric template (13) stored in the portable data carrier.

25 42. A method as claimed in claim 41, comprising receiving as said result application-specific information (14) stored in the data carrier (10) (U10).

30 43. A method as claimed in claim 41 or 42, further comprising transmitting an enquiry to the portable data carrier (10) (U9) and receiving said result in response to said enquiry (U10).

35 44. A method as claimed in any one of claims 41-43, further comprising transmitting a search signal (U1) and, in response to the search signal, receiving a presence signal (U2) from the portable data carrier (10) to detect its presence within a communication range of the external arrangement (20).

45. A method as claimed in any one of claims 41-44, further comprising transmitting the biometric sample according to a predetermined schedule until a match is considered to exist.

5 46. A storage medium comprising a computer program with instructions which are arranged in execution to carry out the method as claimed in any one of claims 41-45.

(47. A system for transferring data, comprising
10 a portable data carrier (10), which comprises a carrier storage (12) for storing data containing a biometric template (13) and an application-specific function (15) as well as carrier communication means (11) for contactless receipt and transmission of data, and
(an external arrangement (20) comprising arrangement communication means (21) for contactless receipt and transmission of data, and a sensor (25) for recording a biometric sample (23),

 c h a r a c t e r i s e d i n t h a t
20 the external arrangement is arranged to transmit the biometric sample to the portable data carrier (10),
 the portable data carrier further comprises carrier processing means (16) for comparing the biometric template with the biometric sample (23) received from the
(external arrangement (20), and

 the portable data carrier and the external arrangement are arranged to complete a mutual handshake process, the portable data carrier is arranged to perform the application-specific function and transmit a result of
(the same to the external arrangement, and the external arrangement is arranged to receive the result from the portable data carrier, only if the biometric sample matches the biometric template.

 48. A method of transferring data between
35 a portable data carrier (10) which comprises a carrier storage (12) for storing data containing a biometric template (13) and an application-specific function (15),

as well as carrier communication means (11) for contactless receipt and transmission of data, and

an external arrangement (20) which comprises arrangement communication means (21) for contactless

5 receipt and transmission of data, and a sensor (25), comprising recording a biometric sample (23) by means of the sensor (U3), characterised in that it further comprises

transmitting from the external arrangement the biometric sample to the portable data carrier (10) (U4),

receiving in the portable data carrier the biometric sample (23) from the external arrangement (20) (B3),

10 comparing by carrier processing means (16) in the data carrier the biometric sample with the biometric template (B4), and

15 completing a handshake process between the portable data carrier and the external arrangement, performing in the portable data carrier the application-specific function and transmitting a result of the same to the external arrangement (B10), as well as receiving in the external arrangement the result from the portable data carrier, only if the biometric sample matches the biometric template.